

Statement of Work

External Independent Peer Review by the Center for Independent Experts

NWFSC Southern California Shelf Rockfish Hook and Line Survey

Scope of Work and CIE Process: The National Marine Fisheries Service's (NMFS) Office of Science and Technology coordinates and manages a contract providing external expertise through the Center for Independent Experts (CIE) to conduct independent peer reviews of NMFS scientific projects. The Statement of Work (SoW) described herein was established by the NMFS Project Contact and Contracting Officer's Technical Representative (COTR), and reviewed by CIE for compliance with their policy for providing independent expertise that can provide impartial and independent peer review without conflicts of interest. CIE reviewers are selected by the CIE Steering Committee and CIE Coordination Team to conduct the independent peer review of NMFS science in compliance with the predetermined Terms of Reference (ToRs) of the peer review. Each CIE reviewer is contracted to deliver an independent peer review report to be approved by the CIE Steering Committee and the report is to be formatted with content requirements as specified in **Annex 1**. This SoW describes the work tasks and deliverables of the CIE reviewer for conducting an independent peer review of the following NMFS project. Further information on the CIE process can be obtained from www.ciereviews.org.

Project Description: The Northwest Fisheries Science Center's (NWFSC) Southern California Shelf Rockfish Hook and Line Survey was designed to collect fishery-independent data for use in the stock assessments of groundfish associated with rocky habitats that are not well-sampled using trawl surveys. Survey data are analyzed to generate annual indices of relative abundance and time series of biological data for several species of shelf rockfish (Genus: *Sebastes*) including bocaccio (*S. paucispinis*) – a species declared overfished by the Pacific Fishery Management Council (PFMC) and NOAA Fisheries and designated as a species of concern by NOAA Fisheries.

Hook and line survey data are also used to calculate abundance indices for several other species of shelf rockfish, and in some cases may be the only fishery-independent data available for use in stock assessments for those species. In addition to bocaccio, an abundance index and biological data from this survey have been incorporated into the Southwest Fisheries Science Center (SWFSC) 2011 stock assessment for greenspotted rockfish (*S. chlorostictus*). Abundance indices have also been calculated for starry rockfish (*S. constellatus*), speckled rockfish (*S. ovalis*), vermilion rockfish (*S. miniatus*) and its recently-delineated cryptic pair, sunset rockfish (*S. crocotulus*). A stock assessment for vermilion rockfish was conducted by the SWFSC in 2005; however its results were not endorsed by the PFMC's Science and Statistical Committee for use in management in part due to newly-identified evidence of a cryptic species pair within the vermilion rockfish complex. Because this survey collects genetic information from all captured individuals, it is possible to generate separate abundance indices and biological data profiles for both vermilion and sunset rockfish retrospectively from the survey's start in 2004. This information may be helpful for re-visiting the stock assessment process for vermilion rockfish (and/or initiating the process for sunset rockfish.)

The overall goal of this review is to evaluate whether the design, protocols, and analytical methods developed for the NWFSC's hook and line survey are suitable for achieving the survey's objectives. The specific goals of the proposed review meeting are to: 1) evaluate the hook and line survey's design and protocols; 2) examine the analytical methods used to generate abundance indices; and, 3) provide suggestions regarding potential expansion of the survey's geographical range and species for which abundance indices are generated - particularly for data-poor and data-limited species. The Terms of Reference (ToRs) of the peer review are attached in **Annex 2**. The tentative agenda of the panel review meeting is attached in **Annex 3**.

Requirements for CIE Reviewers: Two CIE reviewers shall conduct an impartial and independent peer review in accordance with the SoW and ToRs herein. CIE reviewers shall have working knowledge and recent experience in the application of fish population dynamics, stock assessment methods, and fishery survey design. Each CIE reviewer's duties shall not exceed a maximum of 14 days to complete all work tasks of the peer review described herein.

Location of Peer Review: Each CIE reviewer shall conduct an independent peer review during the panel review meeting scheduled in Seattle, Washington tentatively during April 4-5, 2012.

Statement of Tasks: Each CIE reviewer shall complete the following tasks in accordance with the SoW and Schedule of Milestones and Deliverables herein.

Prior to the Peer Review: Upon completion of the CIE reviewer selection by the CIE Steering Committee, the CIE shall provide the CIE reviewer information (full name, title, affiliation, country, address, email) to the COTR, who forwards this information to the NMFS Project Contact no later than the date specified in the Schedule of Milestones and Deliverables. The CIE is responsible for providing the SoW and ToRs to the CIE reviewers. The NMFS Project Contact is responsible for providing the CIE reviewers with the background documents, reports, foreign national security clearance, and other information concerning pertinent meeting arrangements. The NMFS Project Contact is also responsible for providing the Chair a copy of the SoW in advance of the panel review meeting. Any changes to the SoW or ToRs must be made through the COTR prior to the commencement of the peer review.

Foreign National Security Clearance: When CIE reviewers participate during a panel review meeting at a government facility, the NMFS Project Contact is responsible for obtaining the Foreign National Security Clearance approval for CIE reviewers who are non-US citizens. For this reason, the CIE reviewers shall provide requested information (e.g., first and last name, contact information, gender, birth date, passport number, country of passport, travel dates, country of citizenship, country of current residence, and home country) to the NMFS Project Contact for the purpose of their security clearance, and this information shall be submitted at least 30 days before the peer review in accordance with the NOAA Deemed Export Technology Control Program NAO 207-12 regulations available at the Deemed Exports NAO website: <http://deemedexports.noaa.gov/sponsor.html>).

Pre-review Background Documents: Two weeks before the peer review, the NMFS Project Contact will send (by electronic mail or make available at an FTP site) to the CIE reviewers the necessary background information and reports for the peer review. In the case where the

documents need to be mailed, the NMFS Project Contact will consult with the CIE Lead Coordinator on where to send documents. CIE reviewers are responsible only for the pre-review documents that are delivered to the reviewer in accordance to the SoW scheduled deadlines specified herein. The CIE reviewers shall read all documents in preparation for the peer review.

Panel Review Meeting: Each CIE reviewer shall conduct the independent peer review in accordance with the SoW and ToRs, and shall not serve in any other role unless specified herein. **Modifications to the SoW and ToRs cannot be made during the peer review, and any SoW or ToRs modifications prior to the peer review shall be approved by the COTR and CIE Lead Coordinator.** Each CIE reviewer shall actively participate in a professional and respectful manner as a member of the meeting review panel, and their peer review tasks shall be focused on the ToRs as specified herein. The NMFS Project Contact is responsible for any facility arrangements (e.g., conference room for panel review meetings or teleconference arrangements). The NMFS Project Contact is responsible for ensuring that the Chair understands the contractual role of the CIE reviewers as specified herein. The CIE Lead Coordinator can contact the Project Contact to confirm any peer review arrangements, including the meeting facility arrangements.

Contract Deliverables - Independent CIE Peer Review Reports: Each CIE reviewer shall complete an independent peer review report in accordance with the SoW. Each CIE reviewer shall complete the independent peer review according to required format and content as described in Annex 1. Each CIE reviewer shall complete the independent peer review addressing each ToR as described in Annex 2.

Other Tasks – Contribution to Summary Report: Each CIE reviewer may assist the Chair of the panel review meeting with contributions to the Summary Report, based on the terms of reference of the review. Each CIE reviewer is not required to reach a consensus, and should provide a brief summary of the reviewer's views on the summary of findings and conclusions reached by the review panel in accordance with the ToRs.

Specific Tasks for CIE Reviewers: The following chronological list of tasks shall be completed by each CIE reviewer in a timely manner as specified in the **Schedule of Milestones and Deliverables**.

1. Conduct necessary pre-review preparations, including the review of background material and reports provided by the NMFS Project Contact in advance of the peer review.
2. Participate in the panel review meeting in Seattle, Washington during April 4-5, 2012.
3. In Seattle, Washington during April 4-5, 2012 as specified herein, conduct an independent peer review in accordance with the ToRs (**Annex 2**).
4. No later than 20 April 2012, each CIE reviewer shall submit an independent peer review report addressed to the "Center for Independent Experts," and sent to Manoj Shrivani, CIE Lead Coordinator, via email to shivlanim@bellsouth.net, and CIE Regional Coordinator, via email to David Die ddie@rsmas.miami.edu. Each CIE report shall be written using the format and content requirements specified in Annex 1, and address each ToR in **Annex 2**.

Schedule of Milestones and Deliverables: CIE shall complete the tasks and deliverables described in this SoW in accordance with the following schedule.

5 March 2012	CIE sends reviewer contact information to the COTR, who then sends this to the NMFS Project Contact
21 March 2012	NMFS Project Contact sends the CIE Reviewers the pre-review documents
4-5 April 2012	Each reviewer participates and conducts an independent peer review during the panel review meeting
20 April 2012	CIE reviewers submit draft CIE independent peer review reports to the CIE Lead Coordinator and CIE Regional Coordinator
4 May 2012	CIE submits CIE independent peer review reports to the COTR
11 May 2012	The COTR distributes the final CIE reports to the NMFS Project Contact and regional Center Director

Modifications to the Statement of Work: This ‘Time and Materials’ task order may require an update or modification due to possible changes to the terms of reference or schedule of milestones resulting from the fishery management decision process of the NOAA Leadership, Fishery Management Council, and Council’s SSC advisory committee. A request to modify this SoW must be approved by the Contracting Officer at least 15 working days prior to making any permanent changes. The Contracting Officer will notify the COTR within 10 working days after receipt of all required information of the decision on changes. The COTR can approve changes to the milestone dates, list of pre-review documents, and ToRs within the SoW as long as the role and ability of the CIE reviewers to complete the deliverable in accordance with the SoW is not adversely impacted. The SoW and ToRs shall not be changed once the peer review has begun.

Acceptance of Deliverables: Upon review and acceptance of the CIE independent peer review reports by the CIE Lead Coordinator, Regional Coordinator, and Steering Committee, these reports shall be sent to the COTR for final approval as contract deliverables based on compliance with the SoW and ToRs. As specified in the Schedule of Milestones and Deliverables, the CIE shall send via e-mail the contract deliverables (CIE independent peer review reports) to the COTR (William Michaels, via William.Michaels@noaa.gov).

Applicable Performance Standards: The contract is successfully completed when the COTR provides final approval of the contract deliverables. The acceptance of the contract deliverables shall be based on three performance standards:

- (1) each CIE report shall be completed with the format and content in accordance with **Annex 1**,
- (2) each CIE report shall address each ToR as specified in **Annex 2**,
- (3) the CIE reports shall be delivered in a timely manner as specified in the schedule of milestones and deliverables.

Distribution of Approved Deliverables: Upon acceptance by the COTR, the CIE Lead Coordinator shall send via e-mail the final CIE reports in *.PDF format to the COTR. The COTR will distribute the CIE reports to the NMFS Project Contact and Center Director.

Support Personnel:

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Annex 1: Format and Contents of CIE Independent Peer Review Report

1. The CIE independent report shall be prefaced with an Executive Summary providing a concise summary of the findings and recommendations, and specify whether the science reviewed is the best scientific information available.
2. The main body of the reviewer report shall consist of a Background, Description of the Individual Reviewer's Role in the Review Activities, Summary of Findings for each ToR in which the weaknesses and strengths are described, and Conclusions and Recommendations in accordance with the ToRs.
 - a. Reviewers should describe in their own words the review activities completed during the panel review meeting, including providing a brief summary of findings, of the science, conclusions, and recommendations.
 - b. Reviewers should discuss their independent views on each ToR even if these were consistent with those of other panelists, and especially where there were divergent views.
 - c. Reviewers should elaborate on any points raised in the Summary Report that they feel might require further clarification.
 - d. Reviewers shall provide a critique of the NMFS review process, including suggestions for improvements of both process and products.
 - e. The CIE independent report shall be a stand-alone document for others to understand the weaknesses and strengths of the science reviewed, regardless of whether or not they read the summary report. The CIE independent report shall be an independent peer review of each ToRs, and shall not simply repeat the contents of the summary report.
3. The reviewer report shall include the following appendices:
 - Appendix 1: Bibliography of materials provided for review
 - Appendix 2: A copy of the CIE Statement of Work
 - Appendix 3: Panel Membership or other pertinent information from the panel review meeting.

Annex 2: Tentative Terms of Reference for the Peer Review

2012 NWFSC Southern California Shelf Rockfish Hook and Line Survey

- The overall goal of this review is to evaluate whether the design, protocols, and analytical methods developed for the NWFSC's hook and line survey are suitable for achieving the survey's objectives. The survey's primary objective is to generate information for use in stock assessments of structure-associated rockfish, particularly those species which are poorly sampled by trawl gear used in coast-wide surveys. Such information includes fishery-independent indices of abundance as well as biological data on size, age and maturity.
- Review recent literature (to be provided as background materials) to become familiar with the key species and the primary science and management issues within the Pacific Fishery Management Council (PFMC) umbrella for groundfish in general and structure-associated shelf rockfish in particular.
- Evaluate the suitability of the survey sampling design. Specifically, is the design appropriate for generating abundance indices for shelf rockfish species?
 - Comment on the benefits and drawbacks of the current fixed-site design. Are there benefits to replace or modify the survey's existing fixed-site design with one that includes a random component? If so, do the benefits outweigh the drawbacks associated with disrupting the continuity of the survey's current 8-year time series?
- Evaluate the appropriateness of the gear used during the hook and line survey: rod and reel, mainline, gangion specifications, terminal tackle specifications, etc.
- Evaluate the fishing and biological sampling protocols used during the hook and line survey
- Evaluate the methods and assumptions used to analyze the survey data as well as the associated uncertainty of the abundance estimates.
- Evaluate the utility of hook and line survey data for species encountered consistently at a subset of sites, but for which the survey's coverage may be near the margins of their range (e.g., copper rockfish, widow rockfish, yellowtail rockfish) and other species we encounter episodically in each survey year (e.g, chilipepper). Identify modifications to the survey's design, protocols, or analyses which may improve the utility of survey data for stock assessments of additional species.
- Potential survey expansion and other possible enhancements or modifications to the survey which could lead to additional objectives
 - Does the current design lend itself to expansion?
 - Evaluate whether expanding the survey's sampling area would yield information useful for the assessment of structure associated rockfish

- What are the scientific benefits and drawbacks of expanding the survey into adjacent areas currently not included in the survey area such as north of Pt. Conception or into the Cowcod Conservation Areas?
- Would the methods used by this survey be effective for collecting data and generating abundance indices for other structure-associated rockfish with high commercial or recreational importance elsewhere along the coast (e.g., yelloweye rockfish off the WA or OR coast?)
- Final panel report
 - The report will be divided into sections corresponding to design, protocols, analysis, and survey expansion. Each section should contain the reviewers' understanding of the survey's objectives for that component, followed by analysis and commentary, strengths/weaknesses, and recommended changes/modifications (if any). We also request a prioritization of recommended changes and an evaluation of the potential repercussions if the recommendations cannot be implemented due to budget constraints.

The Project Contact will provide final Terms of Reference no later than March 1, 2012.

Annex 3: Tentative Agenda

2012 Hook & Line Survey Review Panel Meeting Seattle, Washington

Wednesday, April 4, 2012

- 8:00-8:30: Welcome, Introductions, and Objectives of the Review Panel
8:30-9:45: Presentation on Survey Background, Rationale, Objectives, and Design
9:45-10:30: Presentation on Survey Operations and Sampling Protocols
10:30-10:45: Break
10:45-12:00: Discussion of Presented Material
12:00-1:15: Lunch
1:15-2:00: Presentation on Analytical Methods
2:00-3:00: Discussion of Analytical Methods
 - Basic approach
 - Model selection3:00-3:15: Break
3:30-4:30: Continued Discussion of Analytical Methods
 - Variance estimation
 - Power analysis4:30: Meeting ends for the day.

Thursday, April 5, 2012

- 8:00-8:15: Re-cap of Yesterday's Discussion
8:30-10:15: Continued Discussion on Analytical Methods and all Presented Material
10:30-10:45: Break
10:15-11:00: Presentation on Potential Survey Expansion
11:00-12:00: Discussion of Potential Survey Expansion
12:00-1:15: Lunch
1:15-2:00: Continued Discussion of Potential Survey Expansion
2:00-3:00: Additional Discussion (Open Topic; as Necessary)
3:00-3:30: Instruction to Panel on Final Reports
3:30pm: Meeting Adjourns